

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

| OMB APPROVAL | |
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|--|---|---|
| 1. Name and Address of Reporting Person* FRODSHAM JAMES (Last) (First) (Middle) C/O CIENA CORPORATION 1201 WINTERSON ROAD (Street) LINTHICUM, MD 21090 (City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol CIENA CORP [CIEN] | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director 10% Owner <input checked="" type="checkbox"/> Officer (give title below) Other (specify below) SR. VP, Chief Strategy Officer |
| | 3. Date of Earliest Transaction (Month/Day/Year) 12/21/2010 | |
| | | 6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person |

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) | | 4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5) | | | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Indirect Beneficial Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|------------|-----------|---|--|---|
| | | | Code | V | Amount | (A) or (D) | Price | | | |
| Common Stock | 12/21/2010 | | s | | 266 ⁽¹⁾ | D | \$20.972 | 206,371 | D | |
| Common Stock | 12/21/2010 | | s | | 3,145 ⁽²⁾ | D | \$20.9724 | 203,226 | D | |
| Common Stock | 12/21/2010 | | s | | 3,931 ⁽³⁾ | D | \$20.9703 | 199,295 | D | |
| Common Stock | 12/21/2010 | | s | | 1,415 ⁽⁴⁾ | D | \$20.9706 | 197,880 | D | |
| Common Stock | 12/21/2010 | | s | | 908 ⁽⁵⁾ | D | \$20.9709 | 196,972 ⁽⁶⁾ | D | |

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) | | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | | 6. Date Exercisable and Expiration Date (Month/Day/Year) | | 7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4) | 10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) |
|--|--|--------------------------------------|--|--------------------------------|---|--|-----|--|-----------------|---|--|--|---|--|
| | | | | Code | V | (A) | (D) | Date Exercisable | Expiration Date | | | | | |

Explanation of Responses:

- Shares reported represent an amount sold to cover the tax liabilities of the reporting person pursuant to a 10b5-1 sales instruction related to a restricted stock unit (RSU) award agreement dated 12/18/2007. RSU was previously reported in Table I of reporting person's Form 3 on 12/17/09.
- Shares reported reflect the amount sold to cover the tax liabilities of the reporting person pursuant to a 10b5-1 sale instruction related to a Performance-Accelerated Restricted Stock Unit (PARSU) award agreement dated December 18, 2006. Acquisition of the PARSU was previously reported in Table I of reporting person's Form 4 on December 19, 2006.
- Shares reported represent an amount sold to cover the tax liabilities of the reporting person pursuant to a 10b5-1 sales instruction related to a restricted stock unit (RSU) award agreement dated 12/16/2008. Acquisition of the RSU was previously reported in Table I of reporting person's Form 3 on 12/17/2009.
- Shares reported represent an amount sold to cover the tax liabilities of the reporting person pursuant to a 10b5-1 sales instruction related to a restricted stock unit (RSU) award agreement dated 12/16/2009. Acquisition of the RSU was previously reported in Table I of reporting person's Form 4 on 12/18/2009.
- Shares reported represent an amount sold to cover the tax liabilities of the reporting person pursuant to a 10b5-1 sales instruction related to a restricted stock unit (RSU) award agreement dated 7/28/2010. Acquisition of the RSU was previously reported in Table I of reporting person's Form 4 on 08/18/2010.
- Shares reported include unvested Restricted Stock Units (RSUs).

By: Erik Lichter For: James A Frodsham 12/23/2010

** Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.